CLAIMS

1. A vector comprising a nucleotide sequence ("NS") coding for a tumour interacting protein ("TIP") and optionally comprising a nucleotide sequence of interest ("NOI") which NOI encodes a product of interest ("POI"); wherein the TIP is capable of recognising a tumour, such that in use the vector is capable of delivering the NOI and/or the POI to the tumour.

2. A vector according to claim 1 wherein the vector comprises the NOI.

3. A vector according to claim 2 wherein the NOI is a therapeutic NOI and/or the POI is a therapeutic POI.

4. A vector according to any one of the preceding claims wherein in use the vector is capable of delivering the NOI and/or the POI to the interior of a tumour mass.

5. A vector according to any one of the preceding claims wherein the TIP is or comprises a tumour binding protein ("TBP").

6. A vector according to any one of the preceding claims wherein the TIP is a TBP.

7. A vector according to any one of the preceding claims wherein the NS and/or the TIP comprises at least one tumour binding domain capable of interacting with at least one tumour associated cell surface molecule ("TACSM").

8. A vector according to claim 7 wherein the TACSM is selectively expressed on one cell type or on a restrictive number of cell types.

9. A vector according to any one of the preceding claims wherein in use the vector is capable of delivering the NOI and/or the POI to a selective tumour site.

10. A vector according to any one of the preceding claims wherein the TIP is or comprises at least part of an antibody.

11. A vector according to any one of the preceding claims wherein the TIP recognises a tropoblast cell surface antigen.

12. A vector according to claim 11 wherein the TIP recognises the 5T4 antigen.

13. A vector according to any one of the preceding claims wherein the NS and NOI and/or the TIP and POI are linked together.

14. A vector according to claim 13 wherein the TIP and POI are directly linked together.

15. A vector according to any one of the preceding claims wherein any one or more of the NS, NOI, TIP and the POI further comprise at least one additional functional component.

16. A vector according to any one of the preceding claims wherein at least the TIP and/or POI further comprise at least one additional functional component.

17. A vector according to claim 15 or16 wherein the additional functional component is selected from any one or more of a signalling entity (such as a signal peptide), an immune enhancer, a toxin, or a biologically active enzyme, or a sequence coding for any of same.

18. A vector according to any one of the preceding claims wherein the retroviral vector comprises a tumour specific promoter enhancer.

19. A vector according to any one of the preceding claims wherein the vector is a retroviral vector.

20. A method of delivering a nucleotide sequence of interest ("NOI") and/or a product of interest ("POI") encoded by same to a tumour, wherein the NOI and/or POI are delivered to the tumour by use of a vector comprising the NOI and/or expressing the POI; wherein

the NOI and/or the POI is capable of recognising a tumour; wherein the NOI and/or the POI is delivered to the tumour; and wherein the vector is a vector according to any one of the preceding claims.

21. A method according to claim 20 wherein the vector is used to deliver the NOI and/or POI *ex vivo* and/or *in vivo* to the tumour.

22. Use of a vector to deliver a nucleotide sequence of interest ("NOI") and/or a product of interest ("POI") encoded by same to a tumour, wherein the NOI and/or POI are delivered to the tumour by use of the vector which comprises the NOI and/or expresses the POI; wherein the NOI and/or the POI is capable of recognising a tumour when the NOI and/or the POI is delivered to the tumour; and wherein the vector is a vector according to any one of the preceding claims..

23. A use according to claim 22 wherein the vector is used to deliver the NOI and/or POI *ex vivo* and/or *in vivo* to the tumour.

24. A method of treating a subject in need of same, the method comprising delivering a nucleotide sequence of interest ("NOI") and/or a product of interest ("POI") encoded by same to a tumour, wherein the NOI and/or POI are delivered to the tumour by use of a vector comprising the NOI and/or expressing the POI; wherein the NOI and/or the POI is capable of recognising a tumour; wherein the NOI and/or the POI is delivered to the tumour; and wherein the vector is a vector according to any one of the preceding claims.

25. A method according to claim 24 wherein the vector is used to deliver the NOI and/or POI *ex vivo* and/or *in vivo* to the tumour.

26. The use of a genetic vectors to deliver a therapeutic gene encoding a secretable TIP (preferably a TBP) to the interior of a tumour mass.

27. A gene delivery system for targeting one or more genes encoding a TIP (preferably a TBP) to a tumour, comprising a genetic vector encoding a TIP (preferably a TBP) and an *in vivo* gene-delivery system.

28. A method of treating cancer comprising administering at least one TIP (preferably at least one TBP) gene in a gene delivery system according to claim 27 either systemically or directly to the site of a tumour.

29. A gene delivery system for introducing one or more genes encoding a TIP (preferably a TBP) into cells of the haematopoietic (preferably myeloid haematopoietic) cell lineage either *in vivo* or *ex vivo*.

30. A method for treating cancer in a mammal, comprising administering to an individual a gene delivery system according to claim 29 that is capable of expressing a TIP (preferably a TBP) in cells derived from a haematopoietic (preferably myeloid haematopoietic) origin.

31. A genetic vector comprising a therapeutic gene or genes encoding a TIP (preferably a TBP), operably linked to an expression regulatory element selectively functional in a cell type present within a tumour mass.

32. A genetic vector comprising a therapeutic gene or genes is delivered to the interior of the tumour wherein the therapeutic gene encodes a TIP (preferably a TBP), which additionally contains one or more effector domains.

33. A method of treating cancer in a mammal which comprises administering to an individual a combination of a cytokine or a cytokine-encoding gene and one or more TIP (preferably a TBP) genes.

34. The delivery of TIP- (preferably a TBP-) encoding genes to the site of a tumour.

35. A vector comprising (a) a NS coding for a TIP and (b) an NOI which encodes a POI; wherein the TIP is capable of recognising a tumour, such that in use the vector is capable

of delivering the NOI and/or the POI to the tumour; and wherein the TIP and POI are fused to each other.

36. A vector comprising (a) a NS coding for a TIP and (b) an NOI which encodes a POI; wherein the TIP is capable of recognising a tumour, such that in use the vector is capable of delivering the NOI and/or the POI to the tumour; wherein the TIP and POI are fused to each other; and wherein the POI is capable of being secreted.

37. Use of a vector according to any one of the preceding claims as an *in situ* production factory of any one or more of the NS, NOI, POI and TIP.

38. Use of a vector according to any one of the preceding claims when present in a cell to deliver any one or more of the NS, NOI, POI and TIP to a neighbouring cell.

39. A vector substantially as described herein.

ADDITIONAL CLAIMS

40. A process for preparing a TBP comprising expressing a NS encoding a TBP in a vector according to claim 5 or any claim dependent thereon.

41. A TBP wherein the TBP is selected from a group consisting of 5T4ScFv.1, 5T4Sab1, 5T4ScFv-IgG, 5T4ScFv-IgE1, B7-1.5T4.1, B7-1.5T4.2, B7-EGF.

42. A TBP obtained by the process of claim 40 or the TBP of claim 41 for subsequent use in a medical application.

43. A TBP according to claim 42 wherein the medical application is a diagnostic application.

44. A TBP according to claim 42 wherein the medical application is a therapeutic application.

45. Use of a TASCM as defined in claim 7 or claim 8 as a prognostic factor and/or a target for cancer therapy.

46. Use of a TASCM according to claim 45 wherein the TASCM is erb-2.